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द्रवचालित तरल शक्ति – पम्प और मोटरें – ज्यामितीय विस्थापन

Indian Standard

HYDRAULIC FLUID POWER — PUMPS AND MOTORS — GEOMETRIC DISPLACEMENTS

ICS 23.100.10

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

July 2000

Price Group 1

Hydraulic Fluid Power Systems Sectional Committee, BP 15

NATIONAL FOREWORD

This Indian Standard which is identical with ISO 3662 :1976 Hydraulic fluid power — Pumps and motors — Geometric displacements' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of the Hydraulic Fluid Power Systems Sectional Committee and approval of the Basic and Production Engineering Division Council.

This standard is intended to guide the manufacturers in the disign of positive displacement hydraulic fluid power pumps and motors.

In the adopted standard, certain terminology, conventions and method of presentation are not identical to those used in Indian Standards. Attention is specially drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their place are listed below along with their degree of equivalence for the editions indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 497 : 1973 Guide to the choice of series of preferred numbers and of series containing more rounded values of preferred numbers	IS 1076 (Part 3) : 1995 Preferred numbers : Part 3 Guide to the choice of series of preferred numbers and of series containing more rounded values of preferred numbers (*second revision*)	Identical
ISO 5598 : 1985 Fluid power systems and components — Vocabulary	IS 10416 : 1992 Fluid power systems and components — Vocabulary (*first revision*)	do

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

IS 14848 : 2000
ISO 3662 : 1976

Indian Standard

HYDRAULIC FLUID POWER — PUMPS AND MOTORS — GEOMETRIC DISPLACEMENTS

0 INTRODUCTION

In hydraulic fluid power systems, power is transmitted and controlled through a liquid under pressure within an enclosed circuit. Pumps are components which convert rotary mechanical power into hydraulic power. Motors are components which convert hydraulic fluid power into rotary mechanical power.

1 SCOPE

This International Standard established the geometric displacements (*V*) of hydraulic fluid power pumps and motors having rotating or oscillating drives.

This International Standard is also applicable to variable displacement units; in such cases, the values refer to the maximum displacement.

2 FIELD OF APPLICATION

The geometric displacements specified by this International Standard may be used as guidelines for the design of positive displacement hydraulic fluid power pumps and motors. They may also be used to derive other basic design criteria and normal ratings.

3 REFERENCES

ISO 497, *Guide to the choice of series of preferred numbers and of series containing more rounded values of preferred numbers.*

ISO 5598, *Fluid power — Vocabulary.*[1]

4 DEFINITIONS

4.1 geometric displacement : The calculated total of all changes in volume of pressure chambers originating from the movement of displacement elements during one revolution of the input (pumps) or output (motors) shaft, or one double stroke of an oscillating drive. Tolerances, clearances, distortions or deformations are not considered.

4.2 For definitions of other terms used, see ISO 5598.

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[1] In preparation.

5 GEOMETRIC DISPLACEMENTS

TABLE – **Nominal values for geometric displacements (*V*), in millilitres (cubic centimetres) per revolution**

0,1	1	10	100	1 000
		(11,2)	(112)	(1 120)
	1,25	12,5	125	1 250
		(14)	(140)	(1 400)
0,16	1,6	16	160	1 600
		(18)	(180)	(1 800)
	2	20	200	2 000
		(22,4)	(224)	(2 240)
0,25	2,5	25	250	2 500
		(28)	(280)	(2 800)
	3,15	31,5	315	3 150
		(35,5)	(355)	(3 550)
0,4	4	40	400	4 000
		(45)	(450)	(4 500)
	5	50	500	5 000
		(56)	(560)	(5 600)
0,63	6,3	63	630	6 300
		(71)	(710)	(7 100)
	8	80	800	8 000
		(90)	(900)	(9 000)

NOTES

1 The nominal geometric displacement is the displacement assigned to hydraulic fluid power pumps and motors for the purpose of convenient designation.

2 Specify values of displacements in excess of 9 000 ml/rev (cm^3/rev) with R 20 numbers. R 10 is the preferred series.

3 Values printed in parentheses are non-preferred values.

6 IDENTIFICATION STATEMENT (Reference to this International Standard)

Use the following statement in test reports, catalogues and sales literature when electing to comply with this International Standard :

"Geometric displacements conform to ISO 3662, *Hydraulic fluid power – Pumps and motors – Geometric displacements.*"

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